

Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims

Claim 1 (currently amended) A tunable filter comprising:

a fixed substrate having an upper surface;

a first plate on the upper surface of said fixed substrate;

a movable substrate having a lower surface opposing the upper surface of the fixed substrate;

a second plate on the lower surface of the movable substrate, wherein the first plate and second plate define a capacitor having a capacitor gap, wherein the capacitor gap is maintained in a vacuum; and

a driver having a first end and a second end, wherein the first end of the driver is mounted directly on the fixed substrate and the second end of the driver is attached to the movable substrate, and wherein a length change of the driver changes the capacitor gap, thereby affecting a frequency response of said tunable filter.

Claim 2 (currently amended) The tunable filter of claim 1, wherein the movable substrate comprises a high temperature superconductor MgO.

Claim 3 (original)                   The tunable filter of claim 1, wherein the first plate comprises a high temperature superconductor.

Claim 4 (original)      The tunable filter of claim 1, wherein the second plate comprises a high temperature superconductor.

Claim 5 (currently amended) The tunable filter of claim 1, wherein ~~each~~ of the movable substrate comprises MgO, the first plate comprises a high temperature superconductor, and the second plate comprises a high temperature superconductor.

Claim 6 (currently amended) A tunable filter comprising:

    a fixed substrate having an upper surface;

    a first plate on the upper surface of the fixed substrate;

    a second plate on the upper surface of the fixed substrate;

    a movable substrate having a lower surface opposing the upper surface of the fixed substrate;

    a floating plate on the lower surface of the movable substrate, wherein the first plate, the second plate and the floating plate define a capacitor having a capacitor gap, wherein the capacitor gap is maintained in a vacuum; and

    a driver having a first end and a second end, wherein the first end of the driver is mounted directly on the fixed substrate and the second end of the driver is attached to the movable substrate, and wherein a length change of the driver changes the capacitor gap, thereby affecting a frequency response of said tunable filter.

Claim 7 (currently amended) The tunable filter of claim 6, wherein the movable substrate comprises a high temperature superconductor MgO.

Claim 8 (original)      The tunable filter of claim 6, wherein the first and second plates comprise a high temperature superconductor.

Claim 9 (original)      The tunable filter of claim 6, wherein the floating plate comprises a high temperature superconductor.

Claim 10 (original)     The tunable filter of claim 6, wherein each of the first plate, second plate, and floating plate comprises a high temperature superconductor.

Claim 11 (original)     The tunable filter of claim 6, wherein the first and second plates comprise a low-loss metal.

Claim 12 (original)     The tunable filter of claim 6, wherein the floating plate comprises a low-loss metal.

Claim 13 (original)     The tunable filter of claim 6, further comprising an inductor coupled to the first plate and the second plate.